

**FOLDABLE PORTABLE TELEPHONE HAVING A  
DISPLAY PORTION SELECTIVELY PUT INTO A  
LENGTHWISE STATE OR AN OBLONG STATE  
AND A PAIR OF FRONT CAMERA PORTIONS**

[0001] This application claims priority of prior application JP 2002-125370, the disclosure of which is incorporated herein by reference.

**BACKGROUND OF THE INVENTION**

[0002] This invention relates to a foldable cellular or portable telephone set and, more particularly, to a foldable cellular or portable telephone set comprising camera portions.

[0003] In a manner known in the art, in recent years, portable telephone sets are used in various ways, i.e., as a browser for the Internet or the like, an electric mail transmission and reception terminal, a portable information terminal (personal digital assistance (PDA)) with a schedule management function or the like, a recording/reproducing terminal for voice and picture data and so on, as well as a telephone call tool.

[0004] The browser is a software for use to grasp a general image of data group and object group and for use to pick up a desired information. The electronic mail is a system used by the terminals such as personal computers, workstations, and so on for use in exchanging data such as characters (texts), voice, etc. in a form of mail (letters) via a computer network. The personal digital assistance is a generic term which represents terminals each of which have a function of an electronic notebook or a personal computer and which can be carried around.

[0005] The portable telephone set of the type described generally comprises a display portion and a console portion such as numeric keypads or the like. The portable telephone set comprising one or more camera portions is also known.

[0006] However, a conventional typical portable telephone set having a foldable (collapsible) structure has a disadvantage that it lacks flexibility and troublesome to operate in case where, for example, displaying the images in landscape form.

[0007] Various folding portable telephone sets and related technical ideas have been proposed. For example, Japanese Unexamined Patent Publication Tokkai No. 2001-156,893 or JP-A 2001-156893 (prior art document 1) discloses a "display system of a communication apparatus" by which the letters (fonts) are easy to read and easy to input. In the prior art document 1, the display system of the communication apparatus having a liquid crystal display which is long in lengthwise direction is provided with a display unit part for rotating the liquid crystal display part from a vertical position to a horizontal position and vice versa and with a display switching part for switching the display of the liquid crystal part from the vertical mode to the horizontal mode with the rotation of the display unit part or performing reverse switching.

[0008] However, the prior art document 1 merely discloses a technical idea for changing the direction of the display screen from the lengthwise to oblong state by rotating the display screen (the display unit). In addition, the prior art

document 1 does not disclose how to display on the display screen image information picked up by the camera portion.

[0009] In addition, Japanese Unexamined Patent Publication Tokkai No. 2000-270,089 or JP-A2000-270069 (prior art document 2) discloses a "portable information terminal with a digital camera" which can be carried around with its camera lens and a liquid crystal surface of a display part facing each other so as to prevent the fragile parts from being exposed outside. The portable information terminal with the digital camera disclosed in the prior art document 2 comprises an image pickup part having image pickup means, a display part having display means, and a hinge part having at least one mechanism for allowing the display part to rotate. When a rotary support part of the image pickup part or the display part is rotated around a rotary shaft, the image pickup means (a lens) of the image pickup part and the display means of the display part are housed opposite to each other, i.e., in a folded state without being exposed. Therefore, the lens and liquid surface can be prevented from dust, flaw, breakage, fault, etc.

[0010] However, the prior art document 2 merely discloses a technical idea in which the lens of the camera and the liquid crystal surface of the display part are positioned to face each other and does not teach an idea for rotating the display screen from lengthwise state to the oblong state, and vice versa.

[0011] U.S. patent application Publication No. US2002/005160 (prior art document 3) discloses a foldable portable terminal unit containing a picture taking camera capable of transmitting an image and voice, monitoring through a display device is enabled in case of taking picture of himself or herself with that picture taking camera as well as taking picture of an outside object. In the foldable portable terminal unit disclosed in the prior art document 3, a lid portion is made foldable with respect to a case main body of the portable terminal unit and rotatable with respect to the case main body. A display device provided in the lid portion is rotated with respect to the picture taking camera fixed on rear face or a side face of the case main body corresponding to the state of taking a picture so as to enable monitoring.

[0012] However, the prior art document 3 merely discloses a technical idea which enables to monitor a display screen in cases of taking picture of him/herself by the camera and of taking picture of the object outside. That is, the prior art document 3 never discloses an idea for shifting the display screen from the lengthwise state to the oblong state and merely discloses a case where only one picture taking camera is provided.

[0013] In addition, Japanese Unexamined Patent Publication Tokkai No. Hei 9-116,882 or JP-A 9-116882 (prior art document 4) discloses "audio visual communication equipment" capable of executing smooth conversation without interrupting the conversation. In the prior art document 4, technical idea comprising the steps of fixedly arranging the two video camera devices at the right and left of the video monitor device and of synthesizing the pictures of the respective camera devices in the center. That is, an object of the prior art document 4 is to execute smooth conversation without any interruptions. The assumption that picture of himself and herself during conversation is taken with the two video camera devices. A three-dimensional (3-D) image processing is also disclosed in the prior art document 4.